

12/09/13 Agenda

- Wake Up
- Review Unit 5 Test
 - *Remediation Packet is on line DUE by THURSDAY!*
 - *Retake MUST be taken before Finals Start!*
- Schedule
 - Monday-Wednesday: Section 6.1 Ratios & Proportions
 - Thursday - Tuesday: Review for Final
- Section 6.1 - Ratios
- Homework Worksheet 1

Section 6.1 - Ratios

Target 6A

Goal:	Simplify & apply ratios in various situations while performing conversions. -----
Today's Takeaways:	1. Know what a ratio is and how to simplify it.
	2. Use ratios to perform conversions.
SWBAT	3. Use extended ratios to solve geometric problems.

Goal 1. Know what a ratio is and how to simplify it.

Ratio:

A ratio compares two numbers using division.

Ex. $\frac{a}{b}$ a to b $a:b$

Ratios are usually expressed in simplest form.

If a and b have the same units, you can just simplify the fraction (ratio).

Ex. $\frac{36}{48}$ QUESTIONS CORRECT $\frac{3}{4}$

Goal 2. Use ratios to perform conversions.

Conversions: If a ratio has unlike units, you need to multiply by a conversion factor.

Converting Units: p. 886 & 921 in book

	United States Customary	Metric
Length	12 inches (in.) = 1 foot (ft) 36 in. = 1 yard (yd) 3 ft = 1 yard 5280 ft = 1 mile (mi) 1760 yd = 1 mile	10 millimeters (mm) = 1 centimeter (cm) 100 cm = 1 meter (m) 1000 mm = 1 meter 1000 m = 1 kilometer (km)

Customary Units and Metric Units

1 in. = 2.54 cm
 1 mi ≈ 1.61 km
 1 ft ≈ 0.305 m

Time

60 seconds (s) = 1 minute (min)	4 weeks (approx.) = 1 month (mo)	12 months = 1 year
60 minutes = 1 hour (h)	365 days = 1 year (yr)	10 years = 1 decade
24 hours = 1 day (d)	52 weeks (approx.) = 1 year	100 years = 1 century
7 days = 1 week (wk)		

Examples:

$$\frac{5 \cancel{\text{ft.}}}{20 \cancel{\text{in.}}} \cdot \frac{12 \text{ in.}}{1 \cancel{\text{ft.}}} = \frac{60}{20} = \frac{6}{2} = \frac{3 \text{ in.}}{1 \text{ in.}}$$

$$\frac{45 \cancel{\text{min.}}}{2 \cancel{\text{hrs.}}} \cdot \frac{1 \text{ hr}}{60 \cancel{\text{min}}} = \frac{45}{120} = \frac{9}{24} = \frac{3}{8}$$

$\frac{a}{b}$

a to b

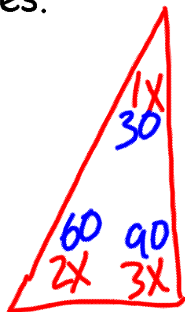
A model train is 54 inches long. The real train is 20 feet long. Write the ratio of the model to the real train.

$$\frac{54 \cancel{\text{in.}}}{20 \cancel{\text{ft.}}} \cdot \frac{1 \cancel{\text{ft.}}}{12 \text{ in.}} = \frac{54}{240} = \frac{9}{40}$$

Goal 3: Use extended ratios to solve geometric problems.

Extended
Ratios:

The measures of the angles in a triangle are in the *extended ratio* of $1x:2x:3x$. Find the measures of the angles.

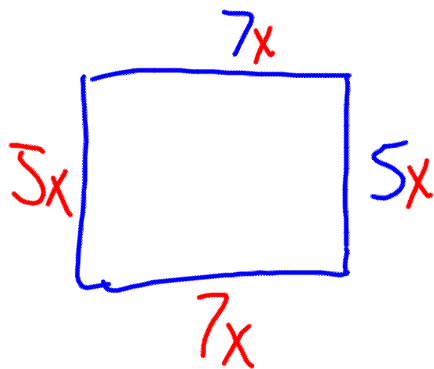


$$1x + 2x + 3x = 180$$

$$6x = 180$$

$$x = 30$$

The perimeter of a rectangular room is 48 feet. The ratio of its length to its width is $7x:5x$. Find the length and width of the room.



$$7x + 7x + 5x + 5x = 48$$

$$24x = 48$$

$$7x = 7(2) = 14\text{ft}$$

$$5x = 5(2) = 10\text{ft}$$